



## **Plausibility check of spatially distributed flood forecasting models by dominant processes and event types**

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This paper presents a strategy for checking the plausibility of a spatially distributed rainfall runoff model. The basic idea is that, depending on the situation, different processes become dominant and hence different model parameters will control the system behaviour. To stratify the situations, three event types are examined: snow melt induced events, convective events, and advective events. The three events mainly differ in the soil moisture conditions which control runoff generation and the interplay between the rapidly responding shallow soil storage and the more slowly responding deeper soil storages. In addition, the model simulations are analysed on a seasonal scale to test the parameters of evaporation and the slower runoff components. This stratification into dominant processes facilitates the identification and plausibility check of the chosen model structure and parameters. The model results are hydrologically interpreted by a comparison with the understanding of the catchment functioning and auxiliary qualitative information. This allows an estimation of the uncertainty and extrapolation ability of the model to situations and events that may differ from those in the data set available for developing the model.